

01-096 Upper Copper River Drainage Salmon and Non-Salmon Subsistence Species Mapping

Investigator: Mentasta Traditional Council

FY2001 Budget: \$47,837

Total Budget (two years): \$81,274

Geographic Area: Cook Inlet-Gulf of Alaska **Information Type:** Harvest Monitoring and TEK

Issue:

Mentasta is a rural community that is very heavily dependent upon subsistence fishing for survival, and the salmon have not been returning to the streams where they have historically spawned. Subsistence fishery TEK data is currently being collected, but there is a need for data storage and visual presentation (i.e., maps) of subsistence fish habitats and historic distribution. Maps of currently non-producing salmon streams will highlight areas that need fisheries restoration projects. Maps of lakes, streams, and rivers supporting non-salmon subsistence fish stocks will be an important tool to identify waters needing increasing regulatory attention in the effort to assure rural residents their allocation in the midst of greatly increasing non-rural fishing pressure on the resources of the Copper River Basin.

Objectives:

- 1) Map streams that historically produced salmon but which no longer produce salmon based on elder information.
- 2) Map the bodies of water supporting non-salmon subsistence species, including a coding system or tabular information summarizing annual quantities harvested by species.
- 3) Digitize the data from the first two objectives into the Mentasta (MTC) geographical information systems (GIS) in order to produce automated maps.
- 4) Coordinate with the National Park Service, Bureau of Land Management, and the U.S. Forest Service in order to establish a GIS network for sharing data and producing mapped information from various sites. All users would have access to the same information.
- 5) Provide this mapped information to the many varied interest groups concerned about Copper River fisheries in hopes of building interest among these groups for cooperation in management based on the facts.
- 6) Design the database to serve as a framework for establishing a comprehensive fisheries budget (including commercial, subsistence, sport, personal use, escapement, mortality, and nutrient balance allocations) for the Copper River Basin.
- 7) Document and analyze the interagency coordination of GIS information, evaluate feasibility, and make recommendations for the future.
- 8) Encourage the analysis of why non-salmon producing streams that once produced salmon currently do not produce salmon.

Methods:

The following methods correspond to the objectives stated above.

- 1) The investigators will review the traditional ecological knowledge (TEK) transcripts and notes from the FY2000 ADF&G TEK project describing historic salmon usage. Investigators will map the data on the USGS Quad maps.
- 2) The investigators will review the traditional ecological knowledge (TEK) transcripts and notes from the FY2001 ADF&G TEK project to identify and locate important non-salmon species. Investigators will map the data on the USGS Quad maps.
- 3) Investigators will digitize the data mapped on the USGS Quads and enter the data into the GIS system to automatically produce maps.
- 4) Investigators would encourage all of the agencies to continue to develop their own fisheries databases, but stressing compatibility among the various databases.
- 5) Investigators will share the results of this project with all interested parties.
- 6) Investigators will develop a network to establish a comprehensive fisheries budget for the Basin.
- 7) Investigators will produce progress and final reports of this GIS project.
- 8) The investigators will pursue ecological analyses of why certain past salmon-producing streams are no longer doing so. This will lead to future USFWS project proposals. Ultimately, the investigators hope to restore salmon to these streams on a priority basis.

Products:

- 1) Automated GIS maps of the Upper Copper River Basin streams not producing salmon, but which historically produced salmon.
- 2) Automated GIS maps of Upper Copper River Basin lakes and streams producing non-salmon harvest.
- 3) A functioning fisheries GIS network between MTC and the federal land management agencies.
- 4) Maps of #1 and #2 for circulating to interest groups.
- 5) Listing of fisheries interest groups for the Copper River Basin.
- 6) Progress and project evaluation reports.

Experience of Investigators:

Charles David is the Environmental Coordinator who manages the GIS for MTC. He has developed the system. MTC is considered a “mature contractor” by The Bureau of Indian Affairs, meaning that the Council is considered fully capable of handling its own affairs. The MTC operates many of its own programs. Additionally, technical assistance will be available if needed from the Wrangell-St. Elias National Park and Preserve staff members.

Partnerships/Collaboration:

This project promotes interaction among subsistence users, tribes, federal and State government agencies, communities, and the general public in the gathering and analysis of map data. There is interest among the cooperating organizations to conduct research in order to understand why certain tributaries produce poorly. This approach increases opportunities for the professional development of all parties involved (fisheries biologists, data managers, regulators, technicians, and managers, as well as school students and college students).

Recommendation:

This project adds value to two major Copper River TEK projects by producing GIS maps. The project is recommended for funding, subject to more detailed budget negotiations prior to concluding a cooperative agreement.

Justification:

This project is integrated with the two major Copper River TEK projects on salmon and non-salmon species, respectively (FIS #00-040 and FIS #01-110). The Mentasta Traditional Council offers its developing GIS capacity to digitize project data and create electronic maps for use in the written reports and in community meetings. MTC plans to collaborate with local tribes and Federal agencies to insure that the resulting GIS database is compatible for all users and widely accessible. The technical approach to this project is adequate for the core objectives - namely digitizing data and producing maps for the TEK report. However, objective #6, to establish an automated framework for development of a Copper River Basin fisheries (allocation) "budget" is vague and lacks necessary detail on sources of data or methods of analysis. It should be dropped from the project. The time allocated to tasks and the corresponding budget were not justified with detailed information in the investigation plan, so additional negotiations would be required before finalizing a cooperative agreement. Mentasta has administrative experience overseeing a large range of local projects and services, aided by a consultant with broad professional and academic experience in resource management. The village is also an integral partner in the FY 2001 TEK project on freshwater species in the Copper River basin. Considered alongside the associated TEK project, this project represents an important new step in cooperative partnerships.